

# INDEX TO VOLUME 137

- $A' \ ^3\Sigma_g^- - X' \ ^1\Pi_u$  Band System of the  $C_2$  Molecule (Ballik and Ramsay), 61.
- Absolute Magnitude and Reddening of SS Cygni (Wallerstein), 991.
- Absorption Coefficient and Microwave Conductivity of Plasmas (Mallozzi and Margenau), 851.
- Abt, H. A. A Discussion of Spectral Classification, 1322.
- Abundance Analysis of Two F-Type Stars in the Galactic Cluster NGC 752 (Gunn and Kraft), 301.
- Abundance of Lithium and the Structure of Gravitationally Contracting Stars of One Solar Mass (Weymann and Moore), 552.
- Abundance of Trace Elements and Non-Equilibrium Effects (Johnson), 858.
- Albada, T. S. van. See Blaauw and Albada, van.
- Alfvén, H. On the Early History of the Sun and the Formation of the Solar System, 981.
- Allen, P. J. See Mayer, Hollinger, and Allen.
- Aller, L. H. See Wallerstein, Greenstein, Parker, Helfer, and Aller.
- Aly, M. K., Evans, J. W., and Orrall, F. Q. Emission-Line Ratios in the Solar Corona, 1313.
- Analysis of Center-to-Limb Variations in  $H\alpha$ ,  $H\beta$ , and  $H\gamma$  (White), 1210.
- Approximate Integral Equations for the Temperature in Non-Gray Model Atmospheres (Stone), 628.
- Are Spiral Flows Stable? (Hazlehurst), 125.
- Area of the Sky Covered by Clusters of Galaxies (Zwicky and Rudnicki), 707.
- Arp, H., Brueckel, F., and Lourens, J. v. B. Long-Period and Red Variables in 47 Tucanae, 228.
- Athay, R. G. Excitation of Chromospheric He I, 931.
- Athay, R. G., and House, L. L. Excitation of Chromospheric Mg I, 601.
- Athay, R. G., and Hyder, C. L. Coronal Ionization by Two-Step Collision Processes, 21.
- Avrett, E. H., and Krook, M. The Temperature Distribution in a Stellar Atmosphere, 874.
- Axford, W. I., Dessler, A. J., and Gottlieb, B. Termination of Solar Wind and Solar Magnetic Field, 1268.
- Axial Rotation of Orion Stars of Spectral Type B5-B9 (McNamara), 316.
- Babcock, H. W. Concentration of Elements over the Surface of a Magnetic Star, 690.
- Bahcall, J. N., Fowler, W. A., Iben, I., Jr., and Sears, R. L. Solar Neutrino Flux, 344.
- Bahng, J., and Schwarzschild, M. Hydrodynamic Oscillations in the Solar Chromosphere, 901.
- Ballik, E. A., and Ramsay, D. A. The  $A' \ ^3\Sigma_g^- - X' \ ^1\Pi_u$  Band System of the  $C_2$  Molecule, 61.
- Ballik, E. A., and Ramsay, D. A. An Extension of the Phillips System of  $C_2$  and a Survey of  $C_2$  States, 84.
- Basu, D. See Das Gupta and Basu.
- Be Spectrum Variable HD 20336 (McLaughlin), 1085.
- Bertiau, F. C., S.J. See Hoof, van, Bertiau, S.J., and Deurinck.
- Billings, D. E. Spectroscopic Limitation on Coronal Heating Mechanisms, 592.
- Billings, D. E., and Lilliequist, C. G. Coronal Temperature Gradient and the Solar Wind, 16.
- Blaauw, A., and Albada, T. S. van. Radial Velocities of B-Type Stars in the Nearest Associations, 791.
- Blaauw, A., and Hoof, A. van. The Spectroscopic Binary HD 23625, 821.
- Blake, R. L., Chubb, T. A., Friedman, H., and Unzicker, A. E. Interpretation of X-Ray Photograph of the Sun, 3.

- Blanco, V. M. Late-Type Stars in Young Clusters, 513.
- Böhm, K. Unstable Modes in the Solar Hydrogen Convection Zone, 881.
- Bracewell, R. N. Correction for Grating Response in Radio Astronomy, 175.
- Brightness Distribution in Discrete Radio Sources. IV. A Discussion of 24 Identified Sources (Maltby, Matthews, and Moffet), 153.
- Brightness Temperature of Venus at 8.6 Mm (Gibson), 611.
- Brown, R. E. Energy Levels in  $N^{14}$  Pertaining to the Ratio  $C^{12}/C^{13}$  Produced in the CNO Cycle, 338.
- Brueckel, F. *See* Arp, Brueckel, and Lourens.
- Burbidge, E. M., Burbidge, G. R., and Prendergast, K. H. The Rotation and Mass of NGC 1084, 376.
- Burbidge, E. M., Burbidge, G. R., and Prendergast, K. H. The Rotation and Physical Conditions in the Seyfert Galaxy NGC 7469, 1022.
- Burbidge, G. The Detection of Stars with Neutron Cores, 995.
- Burbidge, G. R. *See* Burbidge, Burbidge, and Prendergast.
- Calculation of Equivalent Widths from Spectral-Line Profiles (Edmonds, Jr.), 470.
- Cayrel, G., and Cayrel, R. A Detailed Analysis of the Spectrum of Epsilon Virginis, 431.
- Cayrel, R. *See* Cayrel and Cayrel.
- Chandrasekhar, S. The Points of Bifurcation along the Maclaurin, the Jacobi, and the Jeans Sequences, 1185.
- Chandrasekhar, S., and Lebovitz, N. R. The Equilibrium and the Stability of the Jeans Spheroids, 1172.
- Chandrasekhar, S., and Lebovitz, N. R. On the Oscillations of the Maclaurin Spheroid Belonging to the Third Harmonics, 1162.
- Chandrasekhar, S., and Lebovitz, N. R. On the Stability of the Jacobi Ellipsoids, 1142.
- Chandrasekhar's  $X$ -,  $Y$ -, and Related Functions (Sobouti), 348.
- Chiu, H. Neutrino Processes and Red Giants, 343.
- Chubb, T. A. *See* Blake, Chubb, Friedman, and Unzicker.
- Collins, G. W., II. *See* Huffer and Collins.
- Comment on Empirical Inference of Doppler Widths (Thomas), 38.
- Comments on Stellar Spectra (Struve), 1306.
- Computation of Elements of Eclipsing Binary Stars by High-Speed Computing Machines (Huffer and Collins), 347.
- Concentration of Elements over the Surface of a Magnetic Star (Babcock), 690.
- Corbett, H. H. *See* Grant, Corbett, and Gibson.
- Coronal Ionization by Two-Step Collision Processes (Athay and Hyder), 21.
- Coronal Temperature Gradient and the Solar Wind (Billings and Lilliequist), 16.
- Correction for Grating Response in Radio Astronomy (Bracewell), 175.
- Covington, A. E. *See* Swarup, Kakinuma, Covington, Harvey, Mullaly, and Rome.
- Crawford, D. L. Photometry of the Stars of the Cassiopeia-Taurus Group, 523.
- Crawford, D. L.  $U$ ,  $B$ ,  $V$ , and  $H\beta$  Photometry for the Bright B8- and B9-Type Stars, 530.
- Das Gupta, M. K., and Basu, D. Solar Radio Bursts in Relation to Flare Importances, 997.
- Daub, C. T. The Zanstra Mechanism for Nebular Condensations, 184.
- Davies, J. T., and Vaughan, J. M. A New Tabulation of the Voigt Profile, 1302.
- Delta Librae (Sahade and Hernández), 845.
- Demarque, P., and Geisler, J. E. Models for Red Giant Stars. I, 1102.
- Dessler, A. J. *See* Axford, Dessler, and Gottlieb.

- Detailed Analysis of the Spectrum of Epsilon Virginis (Cayrel and Cayrel), 431.  
Detection of Stars with Neutron Cores (Burbidge), 995.  
Detection of Water Vapor on Mars (Spinrad, Münch, and Kaplan), 1319  
Deurinck, R. *See* Hoof, van, Bertiau, S.J., and Deurinck.  
Differential Rotation in Stars with Convective Envelopes (Kippenhahn), 664.  
Diffuse Interstellar Bands. I. A Possible Identification of  $\lambda$  4430 (Herbig), 200.  
Dimensions of Diffuse and Planetary Nebulae in the Small Magellanic Cloud (Henize and Westerlund), 747.  
Discussion of the Disk Component of the Galactic Radio Radiation (Wilson), 1038.  
Discussion of Spectral Classification (edited by Abt), 1322.  
Duorah, H. L., and Kushwaha, R. S. Helium-burning Reaction Products and the Rate of Energy Generation, 566.  
Dynamic Spectra of Jupiter's Decametric Emission, 1961 (Warwick), 41.  
Early History of the Sun and the Formation of the Solar System (Alfvén), 981.  
Editorial, 1.  
Edmonds, F., Jr. On the Calculation of Equivalent Widths from Spectral-Line Profiles, 470.  
Effect of Solar Activity Regions on the Interplanetary Magnetic Field (Greenstadt), 999.  
Effect of a Vertical Magnetic Field on Rayleigh-Taylor Instability (Roberts), 679.  
Eggen, O. J. The Empirical Mass-Luminosity Relation, 1323.  
Emission-Line Ratios in the Solar Corona (Aly, Evans, and Orrall), 1313.  
Emission-Line Stars in the Region of NGC 2068 (Herbig and Kuhl), 398.  
Empirical Mass-Luminosity Relation (Eggen), 1323.  
Energy Levels in  $N^{14}$  Pertaining to the Ratio  $C^{12}/C^{13}$  Produced in the CNO Cycle (Brown), 338.  
Equilibrium and the Stability of the Jeans Spheroids (Chandrasekhar and Lebovitz), 1172.  
Errata, 349, 1004.  
Evans, J. W. *See* Aly, Evans, and Orrall.  
Evidence for an Explosion in the Center of the Galaxy M82 (Lynds and Sandage), 1005.  
Evolutionary Time Scales for Late Carbon-burning Phases with Neutrino Emission (Stothers), 770.  
Excitation of Chromospheric He I (Athay), 931.  
Excitation of Chromospheric Mg I (Athay and House), 601.  
Expected Near Infrared Radiation from Interstellar Molecular Hydrogen (Gould and Harwit), 694.  
Extension of the Phillips System of  $C_2$  and a Survey of  $C_2$  States (Ballik and Ramsay), 84.  
Feast, M. W. Line Weakening and Metal Deficiency in Mira Type Variables, 342.  
Feibelman, W. A. Stars near Beta Lyrae, 701.  
Fermi Acceleration of Charged Particles (Wentzel), 135.  
Ferne, J. D., and Marlborough, J. M. The Variation of the Total to Selective Absorption Ratio with Galactic Longitude, 700.  
Filtering of Spectrophotometric Noise (Whitney), 327.  
Formation of H II Regions (Vandervoort), 381.  
Four-Color Photometric System Applied to Line Blanketing of Subdwarfs (Sandage and Smith), 1057.  
Fowler, W. A. *See* Bahcall, Fowler, Iben, Jr., and Sears.  
Fragmentation of Self-gravitating Gas Clouds (Layzer), 351.  
Friedman, H. *See* Blake, Chubb, Friedman, and Unzicker.  
Further Investigations of the Photometry of NGC 3379 (Miller), 733.

- Gajewski, R., and Winterberg, F. Hydromagnetic Waves in Inhomogeneous Magnetic Fields of Constant Direction, 1203.
- Galactic Structure and Galactic Rotation from Cepheids (Kraft and Schmidt), 249.
- Geisler, J. E. *See* Demarque and Geisler.
- Gibson, J. E. The Brightness Temperature of Venus at 8.6 Mm, 611.
- Gibson, J. E. *See* Grant, Corbett, and Gibson.
- Gottlieb, B. *See* Axford, Dessler, and Gottlieb.
- Gould, R. J., and Harwit, M. Expected Near Infrared Radiation from Interstellar Molecular Hydrogen, 694.
- Grant, C. R., Corbett, H. H., and Gibson, J. E. Measurements of the 4.3-Mm Radiation of Venus, 620.
- Greenstadt, E. W. Effect of Solar Activity Regions on the Interplanetary Magnetic Field, 999.
- Greenstein, J. L. *See* Wallerstein, Greenstein, Parker, Helfer, and Aller.
- Gunn, J. E., and Kraft, R. P. An Abundance Analysis of Two F-Type Stars in the Galactic Cluster NGC 752, 301.
- Harvey, G. A. *See* Swarup, Kakinuma, Covington, Harvey, Mullaly, and Rome.
- Harwit, M. *See* Gould and Harwit.
- Hazlehurst, J. Are Spiral Flows Stable? 125.
- Heating of the Solar Corona by Gravity Waves (Whitaker), 914.
- Helfer, H. L. *See* Wallerstein, Greenstein, Parker, Helfer, and Aller.
- Helium-burning Reaction Products and the Rate of Energy Generation (Duorah and Kushwaha), 566.
- Helmholtz-Kelvin Time Scale for Stars of Very Low Mass (Kumar), 1126.
- Henize, K. G., and Westerlund, B. E. Dimensions of Diffuse and Planetary Nebulae in the Small Magellanic Cloud, 747.
- Herbig, G. H. The Diffuse Interstellar Bands. I. A Possible Identification of  $\lambda$  4430, 200.
- Herbig, G. H., and Kuhi, L. V. Emission-Line Stars in the Region of NGC 2068, 398.
- Hernández, C. A. *See* Sahade and Hernández.
- High-Resolution Studies of Ten Solar Active Regions at Wavelengths of 3–21 Cm (Swarup, Kakinuma, Covington, Harvey, Mullaly, and Rome), 1251.
- Highly Rotating Polytropes. I (Roberts), 1129.
- Hiltner, W. A. *See* Hjellming and Hiltner.
- Hjellming, R. M., and Hiltner, W. A. Light-Curves for Two Wolf-Rayet Binaries: CV Ser and HD 211853, 1080.
- Hodge, P. W. Studies of the Large Magellanic Cloud. VIII. The Cluster NGC 1831, 1033.
- Hollinger, J. P. *See* Mayer, Hollinger, and Allen.
- Hoof, A. van. *See* Blaauw and Hoof, van.
- Hoof, A. van. *See* Hoof, van, Bertiau, S. J., and Deurinck.
- Hoof, A. van, Bertiau, F. C., S. J., and Deurinck, R. Radial Velocities of Twenty-nine Stars in the Scorpio-Centaurus Region, 824.
- House, L. L. *See* Athay and House.
- Howard, R., and Severny, A. Solar Magnetic Fields and the Great Flare of July 16, 1959, 1242.
- Hoyle, F. X-Ray from outside the Solar System, 993.
- Huffer, C. M., and Collins, G. W., II. Computation of Elements of Eclipsing Binary Stars by High-Speed Computing Machines, 347.
- Hyder, C. L. *See* Athay and Hyder.
- Hydrodynamic Oscillations in the Solar Chromosphere (Bahng and Schwarzschild), 901.
- Hydromagnetic Oscillations of a Fluid Sphere about the Equipartition State (Kristian), 102.
- Hydromagnetic Waves in Inhomogeneous Magnetic Fields of Constant Direction (Gajewski and Winterberg), 1203.

- Iben, I., Jr. *See* Bahcall, Fowler, Iben, Jr., and Sears.  
Interpretation of Edmonds' Granulation Data (Wilson), 606.  
Interpretation of Prominence Spectra. VI. Temperature Determination and a Model for Quiescent Prominences (Jefferies and Orrall), 1232.  
Interpretation of X-Ray Photograph of the Sun (Blake, Chubb, Friedman, and Unzicker), 3.  
Ionization Equilibrium Equation of State. V. Twenty-two Element Mixtures at Stellar Temperatures and Densities (Rouse), 1286.
- Jefferies, J. T., and Orrall, F. Q. On the Interpretation of Prominence Spectra. VI. Temperature Determination and a Model for Quiescent Prominences, 1232.  
Johnson, H. R. Abundance of Trace Elements and Non-Equilibrium Effects, 858.  
Jugaku, J. *See* Searle, Sargent, and Jugaku.
- Kakinuma, T. *See* Swarup, Kakinuma, Covington, Harvey, Mullaly, and Rome.  
Kaplan, L. D. *See* Spinrad, Münch, and Kaplan.  
Kaufman, M. Semiempirical Electron Affinities, 1296.  
Kavanagh, R. W. *See* Seeger and Kavanagh.  
Kinman, T. D. Magnitudes and Colors for the Star Clusters in M31, 213.  
Kinman, T. D., and Wirtanen, C. A. Preliminary Results of an RR Lyrae Star Survey with the Lick 20-Inch Astrograph, 698.  
Kippenhahn, R. Differential Rotation in Stars with Convective Envelopes, 664.  
Kraft, R. P. *See* Gunn and Kraft.  
Kraft, R. P., and Schmidt, M. Galactic Structure and Galactic Rotation from Cepheids, 249.  
Kristian, J. Hydromagnetic Oscillations of a Fluid Sphere about the Equipartition State, 102.  
Kristian, J. Perturbations of the Equipartition State in Hydromagnetics: The Tensor Virial Approximation, 117.  
Krook, M. A Perturbation Method for Non-Gray Stellar Atmospheres, 863.  
Krook, M. *See* Avrett and Krook.  
Krzeminski, W. *See* Preston, Krzeminski, Smak, and Williams.  
Kuhi, L. V. *See* Herbig and Kuhi.  
Kuiper, G. P. *See* Wood and Kuiper.  
Kumar, S. S. The Helmholtz-Kelvin Time Scale for Stars of Very Low Mass (Kumar), 1126.  
Kumar, S. S. The Structure of Stars of Very Low Mass, 1121.  
Kundu, M. R., and Spencer, C. L. Spectral Characteristics of Solar Continuum Radiation in the 500-1000 Mc/s Range, 572.  
Kushwaha, R. S. *See* Duorah and Kushwaha.
- Late-Type Stars in Young Clusters (Blanco), 513.  
Layzer, D. On the Fragmentation of Self-gravitating Gas Clouds, 351.  
Lebovitz, N. R. *See* Chandrasekhar and Lebovitz.  
Light-Curves for Two Wolf-Rayet Binaries: CV Ser and HD 211853 (Hjellming and Hiltner), 1080.  
Lilliequist, C. G. *See* Billings and Lilliequist.  
Limb-darkening Observations of H $\alpha$ , H $\beta$ , and H $\gamma$  (White), 347.  
Limitation on the Photometry of Faint Objects (Miller), 1049.  
Limits on the Effect of Coronal Self-emission on the Excitation State of Coronal Ions (Pecker and Thomas), 967.  
Line Weakening and Metal Deficiency in Mira Type Variables (Feast), 342.  
Little, A. G. Observations at 9.1 Cm of Taurus A, the Orion Nebula, Virgo A, Centaurus A, Sagittarius A, and the Omega Nebula, with a 2/3 Fan Beam, 164.

- Liu, V. C. On "The Transitional Aerodynamic Drag of Meteorites," 338.
- Long-Period and Red Variables in 47 Tucanae (Arp, Brueckel, and Lourens), 228.
- Lourens, J. v. B. *See* Arp, Brueckel, and Lourens.
- Lower Solar Corona: Interpretation of the Ultraviolet Spectrum (Pottasch), 945.
- Luminosities and Compositions of the High-Galactic-Latitude Supergiants 89 Herculis and HD 161796 (Searle, Sargent, and Jugaku), 268.
- Lynds, C. R., and Sandage, A. R. Evidence for an Explosion in the Center of the Galaxy M82, 1005.
- McLaughlin, D. B. The Be Spectrum Variable HD 20336, 1085.
- McNamara, D. H. Axial Rotation of Orion Stars of Spectral Type B5-B9, 316.
- Magnitudes and Colors for the Star Clusters in M31 (Kinman), 213.
- Mallozzi, P., and Margenau, H. Absorption Coefficient and Microwave Conductivity of Plasmas, 851.
- Maltby, P., Matthews, T. A., and Moffet, A. T. Brightness Distribution in Discrete Radio Sources. IV. A Discussion of 24 Identified Sources, 153.
- Margenau, H. *See* Mallozzi and Margenau.
- Marlborough, J. M. *See* Fernie and Marlborough.
- Matthews, T. A. *See* Maltby, Matthews, and Moffet.
- Mayer, C. H., Hollinger, J. P., and Allen, P. J. A Search for 3.15-Cm-Wavelength, Circularly Polarized Radiation from Discrete Sources, 1309.
- Measurements of the 4.3-Mm Radiation of Venus (Grant, Corbett, and Gibson), 620.
- Meinel, A. B. On the Ultraviolet Continuous Spectrum of B Stars, 321.
- Meinel, A. B. Spectrophotometry of Nova Herculis 1960, 834.
- Miller, R. H. Further Investigations of the Photometry of NGC 3379, 733.
- Miller, R. H. A Limitation on the Photometry of Faint Objects, 1049.
- Models for Red Giant Stars. I (Demarque and Geisler), 1102.
- Moffet, A. T. *See* Maltby, Matthews, and Moffet.
- Moore, E. *See* Weymann and Moore.
- Morris, D., and Radhakrishnan, V. Tests for Linear Polarization in the 1390 Mc/s Radiation from Six Intense Radio Sources, 147.
- Münch, G. *See* Spinrad, Münch, and Kaplan.
- Mullaly, R. F. *See* Swarup, Kakinuma, Covington, Harvey, Mullaly, and Rome.
- Murray, B. C., and Wildey, R. L. Stellar and Planetary Observations at 10 Microns, 692.
- Neutrino Processes and Red Giants (Chiu), 343.
- New Tabulation of the Voigt Profile (Davies and Vaughan), 1302.
- Note on Thermal Radio Radiation (Oster), 332.
- Observations at 9.1 Cm of Taurus A, the Orion Nebula, Virgo A, Centaurus A, Sagittarius A, and the Omega Nebula, with a 2'3 Fan Beam (Little), 164.
- Orrall, F. Q. *See* Aly, Evans, and Orrall.
- Orrall, F. Q. *See* Jefferies and Orrall.
- Oscillations of the Maclaurin Spheroid Belonging to the Third Harmonics (Chandrasekhar and Lebovitz), 1162.
- Oster, L. Note on Thermal Radio Radiation, 332.
- Parker, R. *See* Wallerstein, Greenstein, Parker, Helfer, and Aller.
- Pecker, C., and Thomas, R. N. Some Limits on the Effect of Coronal Self-emission on the Excitation State of Coronal Ions, 967.
- Penetrative Convection (Veronis), 641.



- Perturbation Method for Non-Gray Stellar Atmospheres (Krook), 863.
- Perturbations of the Equipartition State in Hydromagnetics: The Tensor Virial Approximation (Kristian), 117.
- Pesch, P. Spectrographic and Photometric Observations of Some Stars from the *Luminous Stars in the Northern Milky Way I and II* Catalogues, 547.
- Photoelectric Observations of RW Trianguli (Walker), 485.
- Photometric Studies of Asteroids. X (Wood and Kuiper), 1279.
- Photometry of the Stars of the Cassiopeia-Taurus Group (Crawford), 523.
- Physical Conditions in Limb Flares and Active Prominences. VI. Selective Excitation Conditions (Tandberg-Hanssen), 26.
- Points of Bifurcation along the Maclaurin, the Jacobi, and the Jeans Sequences (Chandrasekhar), 1185.
- Position and Sign of Jupiter's Magnetic Moment (Warwick), 1317.
- Pottasch, S. R. The Lower Solar Corona: Interpretation of the Ultraviolet Spectrum, 945.
- Preliminary Results of an RR Lyrae Star Survey with the Lick 20-Inch Astrograph (Kinman and Wirtanen), 698.
- Prendergast, K. H. *See* Burbidge, Burbidge, and Prendergast.
- Preston, G. W., Krzeminski, W., Smak, J., and Williams, J. A. A Spectroscopic and Photoelectric Survey of the RV Tauri Stars, 401.
- Radhakrishnan, V. *See* Morris and Radhakrishnan.
- Radial Velocities of B-Type Stars in the Nearest Associations (Blaauw and Albada, van), 791.
- Radial Velocities of Twenty-nine Stars in the Scorpio-Centaurus Region (Hoof, van, Bertiau, S. J., and Deurinck), 824.
- Ramsay, D. A. *See* Ballik and Ramsay.
- Rate of Star Formation. II. The Rate of Formation of Stars of Different Mass (Schmidt), 758.
- Red Giants with Extreme Metal Deficiencies (Wallerstein, Greenstein, Parker, Helfer, and Aller), 280.
- Revised Classification of 1500 Bright Galaxies (Vaucouleurs, de), 1322.
- Ringuelet-Kaswalder, A. E. Short-Period Radial-Velocity Variation of 48 Librae, 1310.
- Roberts, P. H. The Effect of a Vertical Magnetic Field on Rayleigh-Taylor Instability, 679.
- Roberts, P. H. On Highly Rotating Polytropes. I, 1129.
- Roberts, P. H., and Stewartson, K. On the Stability of a Maclaurin Spheroid of Small Viscosity, 777.
- Rome, J. *See* Swarup, Kakinuma, Covington, Harvey, Mullaly, and Rome.
- Rotation and Mass of the Magellanic-Type Galaxy NGC 4631 (Vaucouleurs, de, and Vaucouleurs, de), 363.
- Rotation and Mass of NGC 1084 (Burbidge, Burbidge, and Prendergast), 376.
- Rotation and Physical Conditions in the Seyfert Galaxy NGC 7469 (Burbidge, Burbidge, and Prendergast), 1022.
- Rouse, C. A. Ionization Equilibrium Equation of State. V. Twenty-two Element Mixtures at Stellar Temperatures and Densities, 1286.
- Rudnicki, K. *See* Zwicky and Rudnicki.
- Sahade, J., and Hernández, C. A. Delta Librae, 845.
- Sandage, A., and Smith, L. L. A Four-Color Photometric System Applied to Line Blanketing of Subdwarfs, 1057.
- Sandage, A. R. *See* Lynds and Sandage.
- Sargent, W. L. W. *See* Searle, Sargent, and Jugaku.
- Schmidt, M. The Rate of Star Formation. II. The Rate of Formation of Stars of Different Mass, 758.

- Schmidt, M. *See* Kraft and Schmidt.
- Schwarzschild, M. *See* Bahng and Schwarzschild.
- Search for 3.15-Cm-Wavelength, Circularly Polarized Radiation from Discrete Sources (Mayer, Hollinger, and Allen), 1309.
- Searle, L., Sargent, W. L. W., and Jugaku, J. The Luminosities and Compositions of the High-Galactic-Latitude Supergiants 89 Herculis and HD 161796, 268.
- Sears, R. L. *See* Bahcall, Fowler, Iben, Jr., and Sears.
- Seeger, P. A., and Kavanagh, R. W. The 7.66-Mev State of  $C^{12}$  and Helium-burning, 704.
- Semiempirical Electron Affinities (Kaufman), 1296.
- 7.66-Mev State of  $C^{12}$  and Helium-burning (Seeger and Kavanagh), 704.
- Severny, A. *See* Howard and Severny.
- Short-Period Radial-Velocity Variation of 48 Librae (Ringuelet-Kaswader), 1310.
- Smak, J. *See* Preston, Krzeminski, Smak, and Williams.
- Smith, E. v. P. Spectrum of the Flare of September 2, 1960, 580.
- Smith, L. L. *See* Sandage and Smith.
- Sobouti, Y. Chandrasekhar's  $X$ -,  $Y$ -, and Related Functions, 348.
- Solar Magnetic Fields and the Great Flare of July 16, 1959 (Howard and Severny), 1242.
- Solar Neutrino Flux (Bahcall, Fowler, Iben, Jr., and Sears), 344.
- Solar Radio Bursts in Relation to Flare Importances (Das Gupta and Basu), 997.
- Source Functions of the Magnesium b Lines (Waddell), 1210.
- Southern Galaxies. III. Isophotometry of the Large Barred Spiral NGC 1313 (Vaucouleurs, de), 720.
- Spectral Characteristics of Solar Continuum Radiation in the 500–1000 Mc/s Range (Kundu and Spencer), 572.
- Spectrographic and Photometric Observations of Some Stars from the *Luminous Stars in the Northern Milky Way I and II* Catalogues (Pesch), 547.
- Spectrophotometry of Nova Herculis 1960 (Meinel), 834.
- Spectroscopic Binary HD 23625 (Blaauw and Hoof, van), 821.
- Spectroscopic Limitation on Coronal Heating Mechanisms (Billings), 592.
- Spectroscopic and Photoelectric Survey of the RV Tauri Stars (Preston, Krzeminski, Smak, and Williams), 401.
- Spectrum of the Flare of September 2, 1960 (Smith), 580.
- Spencer, C. L. *See* Kundu and Spencer.
- Spinrad, H., Münch, G., and Kaplan, L. D. The Detection of Water Vapor on Mars, 1319.
- Stability of the Jacobi Ellipsoids (Chandrasekhar and Lebovitz), 1142.
- Stability of a Maclaurin Spheroid of Small Viscosity (Roberts and Stewartson), 777.
- Stars near Beta Lyrae (Feibelman), 701.
- Stellar and Planetary Observations at 10 Microns (Murray and Wildey), 692.
- Stewartson, K. *See* Roberts and Stewartson.
- Stone, P. H. Approximate Integral Equations for the Temperature in Non-Gray Model Atmospheres, 628.
- Stothers, R. Evolutionary Time Scales for Late Carbon-burning Phases with Neutrino Emission, 770.
- Structure of Stars of Very Low Mass (Kumar), 1121.
- Struve, O. Comments on Stellar Spectra, 1306.
- Studies of the Large Magellanic Cloud. VIII. The Cluster NGC 1831 (Hodge), 1033.
- Swarup, G., Kakinuma, T., Covington, A. E., Harvey, G. A., Mullaly, R. F., and Rome, J. High-Resolution Studies of Ten Solar Active Regions at Wavelengths of 3–21 Cm, 1251.
- Systematic Variations in the Slope of the Correlation between the Intensity of  $\lambda$  4430 and Color Excess (Wampler), 1071.



- Tandberg-Hanssen, E. Physical Conditions in Limb Flares and Active Prominences. VI. Selective Excitation Conditions, 26.
- Temperature Distribution in a Stellar Atmosphere (Avrett and Krook), 874.
- Termination of Solar Wind and Solar Magnetic Field (Axford, Dessler, and Gottlieb), 1268.
- Tests for Linear Polarization in the 1390 Mc/s Radiation from Six Intense Radio Sources (Morris and Radhakrishnan), 147.
- Theory of Synchrotron Radiation from Stars with Dipole Magnetic Fields (Thorne), 1003.
- Thomas, R. N. Comment on Empirical Inference of Doppler Widths, 38.
- Thomas, R. N. *See* Pecker and Thomas.
- Thorne, K. S. The Theory of Synchrotron Radiation from Stars with Dipole Magnetic Fields, 1003.
- "The Transitional Aerodynamic Drag of Meteorites" (Liu), 338.
- $U$ ,  $B$ ,  $V$ , and  $H\beta$  Photometry for the Bright B8- and B9-Type Stars (Crawford), 530.
- Ultraviolet Continuous Spectrum of B Stars (Meinel), 321.
- Unstable Modes in the Solar Hydrogen Convection Zone (Böhm), 881.
- Unzicker, A. E. *See* Blake, Chubb, Friedman, and Unzicker.
- Vandervoort, P. O. The Formation of H II Regions, 381.
- Variation of the Total to Selective Absorption Ratio with Galactic Longitude (Ferne and Marlborough), 700.
- Vaucouleurs, A. de. *See* Vaucouleurs, de, and Vaucouleurs, de.
- Vaucouleurs, G. de. Revised Classification of 1500 Bright Galaxies, 1322.
- Vaucouleurs, G. de. Southern Galaxies. III. Isophotometry of the Large Barred Spiral NGC 1313, 720.
- Vaucouleurs, G. de, and Vaucouleurs, A. de. Rotation and Mass of the Magellanic-Type Galaxy NGC 4631, 363.
- Vaughan, J. M. *See* Davies and Vaughan.
- Veronis, G. Penetrative Convection, 641.
- Waddell, J., III. The Source Functions of the Magnesium b Lines, 1210.
- Walker, M. F. Photoelectric Observations of RW Trianguli, 485.
- Wallerstein, G. On the Absolute Magnitude and Reddening of SS Cygni, 991.
- Wallerstein, G., Greenstein, J. L., Parker, R., Helfer, H. L., and Aller, L. H. Red Giants with Extreme Metal Deficiencies, 280.
- Wampler, E. J. Systematic Variations in the Slope of the Correlation between the Intensity of  $\lambda$  4430 and Color Excess, 1071.
- Warwick, J. W. Dynamic Spectra of Jupiter's Decametric Emission, 1961, 41.
- Warwick, J. W. The Position and Sign of Jupiter's Magnetic Moment, 1317.
- Wentzel, D. G. Fermi Acceleration of Charged Particles, 135.
- Westerlund, B. E. *See* Henize and Westerlund.
- Weymann, R., and Moore, E. The Abundance of Lithium and the Structure of Gravitationally Contracting Stars on One Solar Mass, 552.
- Whitaker, W. A. Heating of the Solar Corona by Gravity Waves, 914.
- White, O. R. Analysis of Center-to-Limb Variations in  $H\alpha$ ,  $H\beta$ , and  $H\gamma$ , 1210.
- White, O. R. Limb-darkening Observations of  $H\alpha$ ,  $H\beta$ , and  $H\gamma$ , 347.
- Whitney, C. A. The Filtering of Spectrophotometric Noise, 327.
- Willey, R. L. *See* Murray and Willey.
- Williams, J. A. *See* Preston, Krzeminski, Smak, and Williams.
- Wilson, P. R. An Interpretation of Edmonds' Granulation Data, 606.

Wilson, R. W. A Discussion of the Disk Component of the Galactic Radio Radiation, 1038.

Winterberg, F. *See* Gajewski and Winterberg.

Wirtanen, C. A. *See* Kinman and Wirtanen.

Wood, H. J., and Kuiper, G. P. Photometric Studies of Asteroids. X, 1279.

X-Rays from outside the Solar System (Hoyle), 993.

Zanstra Mechanism for Nebular Condensations (Daub), 184.

Zwicky, F., and Rudnicki, K. Area of the Sky Covered by Clusters of Galaxies, 707.